AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) A method of estimating a process efficiency of a dialysis system comprising a dialyzer, wherein said dialyzer is connected to a patient's blood system for performing a dialysis treatment of a patient, said dialyzer having a potential cleaning capacity (K_{eff}, K), wherein said method comprises:

determining a whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) defining a patient's response to the potential cleaning capacity (K_{eff}, K).

2. (Previously Presented) A method according to claim 1, wherein the step of determining the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) comprises:

measuring a final blood urea concentration no later than approximately one minute after the end of a dialysis treatment;

measuring an equilibrated blood urea concentration no earlier than approximately one half hour after the end of the dialysis treatment; and

dividing said final blood urea concentration by said equilibrated blood urea concentration.

3. (Previously Presented) A method according to claim 2, wherein said final blood urea concentration is measured immediately after the end of the dialysis treatment to obtain the whole body clearance ratio (K_{wb}/K) with respect to a dialyzer clearance (K).

4. (Previously Presented) A method according to claim 2, wherein said final blood urea concentration is measured approximately one minute after the end of the

dialysis treatment to obtain the whole body clearance ratio (K_{wb}/K_{eff}) with respect to an effective clearance (K_{eff}).

5. (Previously Presented) A method according to claim 1, wherein the step of determining the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) comprises of:

measuring an initial urea concentration (C_{d0},C_{bo});

measuring at least two subsequent urea concentration values at spaced time intervals after the dialysis treatment has started, a first value of said at least two values being measured no earlier than approximately one half hour after the dialysis treatment has started;

deriving a starting urea concentration based on an extrapolation in time of said at least two values back to the start of the dialysis treatment; and

dividing said starting urea concentration by said initial urea concentration (C_{dO}, C_{bO}).

6. (Currently Amended) A method of estimating a whole body clearance ratio (K_{wb}/K_{eff}), with respect to an effective clearance (K_{eff}), of a dialysis treatment of a patient, said whole body clearance ratio (K_{wb}/K_{eff}) defining a response to a potential cleaning capacity (K_{eff}) of a dialyzer performing the dialysis treatment, comprising:

determining the whole body clearance ratio (K_{wb}/K_{eff}), with respect to the effective clearance (K_{eff}), based on a measurement of a slope (K_{wb}/V) of a logarithmic removal rate function (C_d, C_b), said function corresponding to a lowering of a urea concentration during the dialysis ~~treatment~~ treatment.

7. (Previously Presented) A method according to claim 6, further comprising:

determining an initial dialysate urea concentration (C_{d0});

determining a total flow rate (Q_d) of spent dialysate during the dialysis treatment, said dialysis treatment including any ultrafiltration;

calculating, based on measurements performed during a steady state phase (t_3 - t_4) of the treatment, the slope (K_{wb}/V) of said logarithmic removal rate function (C_d)[[,]];

measuring a predialysis urea mass (m_0); and

determining the whole body clearance ratio (K_{wb}/K_{eff}), with respect to the effective clearance (K_{eff}), as a product of said slope (K_{wb}/V) and said predialysis urea mass (m_0), divided by said total flow rate (Q_d) and divided by said initial dialysate urea concentration (C_{dO}).

8. (Previously Presented) A method according to claim 6, further comprising:

calculating, based on measurements performed during a steady state phase (t_3 - t_4) of the dialysis treatment, the slope (K_{wb}/V) of said logarithmic removal rate function (C_d[[;]], C_b);

determining an entire distribution volume (V); and

determining the whole body clearance ratio (K_{wb}/K_{eff},K_{wb}/K) as the product of said slope (K_{wb}/V) and said entire distribution volume (V) divided by the potential cleaning capacity (K_{eff},K).

9. (Previously Presented) A method according to one of claims 7 or 8, wherein the slope (K_{wb}/V) of said logarithmic removal rate function (C_d) is measured on a dialysate side of a dialysis system comprising the dialyzer.

10. (Previously Presented) A method according to claim 8, wherein the slope (K_{wb}/V) of said logarithmic removal rate function (C_b) is measured on a blood side of a dialysis system comprising the dialyzer.

11. (Canceled)

12. (Previously Presented) A computer readable medium, having a program recorded thereon, wherein said program comprises instructions executed by the computer for performing the method of claim 1.

13. (Canceled)

14. (Previously Presented) A computer readable medium, having a program recorded thereon, wherein said program comprises instructions executed by the computer for performing the method of claim 6.

15. (Previously Presented) A method of performing a dialysis treatment program by a dialyzer, said method comprising the steps of:

performing a first dialysis treatment of the patient under a first set of conditions which include at least one of a treatment time and a composition of a dialysate in the dialyzer;

estimating, during the first dialysis treatment, a whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) according to one of claims 2 to 6;

comparing the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) to a threshold ratio; and

performing a dialysis treatment of the patient after said first dialysis treatment under a second set of conditions which are different from the first set of conditions, if the whole body clearance ratio (K_{wb}/K_{eff}, K_{wb}/K) is less than the threshold ratio.

16. (Currently Amended) An apparatus ~~adapted~~ configured to estimate a whole body clearance ratio of a dialysis treatment of a patient, the whole body clearance ratio (K_{wb}/K_{eff}), with respect to an effective clearance (K_{eff}), defining a

response to a potential cleaning capacity of a dialyzer performing the dialysis treatment, said apparatus comprising:

a urea monitor circuit ~~adapted~~ configured to determine an initial dialysate urea concentration (C_{d0}), determine a total flow rate (Q_d) of spent dialysate during the dialysis treatment including any ultra filtration, measure, during a steady state phase (t_3 - t_4) of the dialysis treatment, a slope (K_{wb}/V) of a removal rate function corresponding to a lowering of a dialysate urea concentration during the dialysis treatment, and measure a predialysis urea mass (m_0); and

a processor ~~adapted~~ configured to determine the whole body clearance ratio (K_{wb}/K_{eff}) for the patient, the whole body clearance ratio (K_{wb}/K_{eff}), with respect to the effective clearance (K_{eff}), being determined as the product of said slope (K_{wb}/V) and said predialysis urea mass (m_0), divided by said flow rate (Q_d) and divided by said initial dialysate urea concentration (C_{d0}).

17. (Currently Amended) Use of the apparatus according to the claim 16 for estimating a whole body clearance ratio of a dialysis treatment of a patient, including the step of determining a whole body clearance ratio.